LISTING OF THE CLAIMS

No amendments to the claims are made in this paper. The following listing of the claims is provided for convenience.

1. (Previously presented) A method for directly identifying a candidate compound as an agonist or inverse agonist of an endogenous, constitutively active G protein coupled orphan receptor, comprising the steps of:

(a) providing a GPCR Fusion Protein, said GPCR Fusion Protein comprising:

(i) an endogenous, constitutively active G protein coupled orphan receptor; and

(ii) a G protein; and

(b) contacting said GPCR Fusion Protein with a candidate compound;

(c) measuring the ability of said compound to inhibit or stimulate the activity of said receptor; and

(d) identifying said compound as an agonist or an inverse agonist of said receptor, wherein said compound is identified as an agonist by stimulating the activity of said receptor, and said compound is identified as an inverse agonist by inhibiting the activity of said receptor.

2. (Original) The method of claim 1 wherein the compound is directly identified as an inverse agonist to said orphan receptor.

3. (Original) The method of claim 1 wherein the compound is directly identified as an agonist to said orphan receptor.

4. -7. (Canceled)

8. (Previously presented) The method of claim 1 wherein said orphan receptor is selected from the group consisting of: GPR3 (SEQ ID NO:46), GPR4 (SEQ ID NO:60), GPR6 (SEQ ID NO:47), GPR12 (SEQ ID NO:48), GPR21 (SEQ ID NO:50), OGR1 (SEQ ID NO:27), GHSR (SEQ ID NO:45), RE2 (SEQ ID NO:23) and ALO22171 (SEQ ID NO:49).

9. (Withdrawn) The method of claim 1 wherein said orphan receptor is GPR6.

10. (Original) The method of claim 1 wherein said G protein is selected from the group consisting of: Gs, Gi, Gq and Go.

11. - 19. (Canceled)

20. (Previously presented) The method of claim 1, wherein said GPCR fusion protein is expressed in a mammalian cell.

21. (Previously presented) The method of claim 1 or 20, wherein said constitutively active G protein coupled orphan receptor is mammalian.

22. (Previously presented) The method of claim 1, wherein said orphan receptor is GPR3.

23. (Previously presented) The method of claim 1, wherein said orphan receptor is associated with a disease state or disorder selected from: obesity and epilepsy.

24. (Previously presented) The method of claim 1, wherein said method further comprises formulating said identified agonist or inverse agonist as a pharmaceutical composition.

25. (Previously presented) The method of claim 1, wherein said method is carried out using a GTP membrane binding scintillation proximity assay.